GENERAL CHEMISTRY I
CHEM 1201 FALL 2009

Dr. Elzbieta (Elizabeth) Cook
Phone: 578-3574
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Office & Hours: Williams 213
MWF: 10:30 am – 12:30 pm
MW: 1:40 – 3:00 pm
You can also make an appointment outside of the above hours

Sec. 01/11 MWF 7:40 – 8:30 am, 103 Williams
Sec. 03/12 MWF 9:40 – 10:30 am, 103 Williams
Sec. 10/13 MWF 12:40 – 1:30 pm, 102 Williams

Moodle Course ID: 2009 Fall CHEM 1201 for Elzbieta Cook

Course Description: *For science/engineering curricula.* Modern chemical theory and principles; quantitative approach and problem solving; descriptive chemistry of selected elements and compounds.

Course Objective: CHEM 1201 is a General Education course in the Natural Sciences area, physical science subdivision. Students will demonstrate knowledge of the basic theories of chemistry and its underlying principles. Using this knowledge, students will demonstrate deductive and inductive reasoning to explore and explain scientific principles. Students are expected to comprehend how knowledge is acquired and applied and ***to get prepared for what awaits them in further chemistry and other science courses.***

Required Materials:

1) **Text** – *Chemistry, The Central Science, 11th ed.*, Brown, LeMay, Bursten and Murphy, Prentice Hall, Inc., 2009.
2) **Lecture Templates** – To be purchased ($15) from the *SAACS*.
   SAACS contact information: Daniel Devillier (daniel.devillier@gmail.com)
3) **Access to *MasteringChemistry*** – See below under Homework.

Optional Materials:

Student's Guide to Chemistry, The Central Science, 11th ed., James C. Hill, Prentice Hall, Inc., 2009.
Solutions to Red Exercises in *Chemistry, The Central Science, 11th ed.*, Prentice Hall, Inc., 2009.

Course Requirements: Students are expected to attend all scheduled lecture periods.

Exams: Students are required to take four (4) evening exams and a comprehensive final exam. If an exam is missed due to a University allowed absence (documentation is required), the missing grade will be prorated over the remaining in-class exams.

PLEASE NOTE THAT NO MAKEUP EXAMS WILL BE GIVEN. Also, no exam grade will be dropped.

For each exam, a student needs to bring a #2 pencil, an eraser, a non-programmable calculator, a LARGE $8^1/_2$" × 11" scantron sheet and a picture ID.

The use of cell phones, PDAs or computers is NOT allowed during the exams.

Our evening exams are scheduled for the following Mondays: Sept. 15, Oct. 13, Nov. 10 and Dec. 1, and will occur at 6:15 – 7:30 pm at locations to be announced at a later date.

The Group Final Exam is scheduled for Monday, December 7, 5:30 – 7:30 pm.

Homework: Ten (10) homework assignments will be submitted on-line through *MasteringChemistry* (no paper submissions). You will have multiple submissions available for each assigned homework. Unless otherwise announced, submission deadlines will be ***at 8 pm*** on each of the days a given assignment is due (*see the Tentative Schedule for details).*
MasteringChemistry Course ID: **MCCOOK21765** (do not confuse it with the Moodle Course ID; see the information on the registration procedure)

Suggested Problems: Suggested end-of-chapter problems are listed on the 1st page of each of the chapter lecture templates. They will help you prepare for the homework assignments and for the exams. *These problems will not be turned in for grades (for a vast majority of them, you will find answers in the back of the textbook).*

Bonus: quizzes and/or writings will be given throughout the semester, and will count towards bonus. Diligence in completing bonus activities may be considered when final grades are being issued.

Course Evaluation: The course grade will be based on a percentage of the 1000 total points. In determining the overall grade in the course, the following scheme will be used:

4 In-Class Exams (4×150 points)	600
Homework Assignments	150
Comprehensive Final Exam	250
TOTAL POINTS	**1000**

The following letter grade cut-offs will be used at the end of the semester.

A ≥ 90% > B ≥ 80% > C ≥ 70% > D ≥ 60% > F
A ≥ 900 > B ≥ 800 > C ≥ 700 > D ≥ 600 > F

Assistance: There is a variety of assistance available to you.

Most importantly, do not leave any questions unanswered for too long!

1) **Feel free to visit me in my office or email me!!!**
2) The Supplementary Instruction (SI) TA for this class is Ryan Marcel (rmarce2@tigers.lsu.edu)
SI Sessions:

SI Office Hours:
3) Old exams will be posted on ***Moodle***. Also, please read *Best Practices* on ***Moodle***.
4) The **Biology-Chemistry Tutor Room, 169 Coates Hall** has FREE tutors through the Center for Academic Success (CAS);
Tel: 578-7744
Room: 263 Coates Hall
Time: 11:00 am - 5:30 pm Mon. - Thurs.
11:00 am - 3:00 pm Fri.
5) CAS is an excellent place to go for help with overall learning skills, www.cas.lsu.edu.

Academic Misconduct: Any academic misconduct, whether premeditated or unpremeditated (as defined by the *Code of Student Conduct*) will be reported to the Office of the Dean of Students for appropriate actions.

CHEM 1201 Group Syllabus

Chapter 1: Introduction: Matter and Measurement

Students are responsible for reading & understanding chapter 1.

Chapter 2: Atoms, Molecules, and Ions

Students are responsible for reading & understanding sections 2.1-2.2

2.3 The Modern View of Atomic Structure
2.4 Atomic Weights
2.5 The Periodic Table
2.6 Molecules and Molecular Compounds
2.7 Ions and Ionic Compounds
2.8 Naming Inorganic Compounds
2.9 Some Simple Organic Compounds

Chapter 3: Stoichiometry: Calculations with Chemical Formulas and Equations

3.1 Chemical Equations
3.2 Some Simple Patterns of Chemical Reactivity
3.3 Formula Weights
3.4 Avogadro's Number and the Mole
3.5 Empirical Formulas from Analyses
3.6 Quantitative Information from Balanced Equations
3.7 Limiting Reagents

Chapter 4: Aqueous Reactions and Solution Stoichiometry

4.1 General Properties of Aqueous Solution
4.2 Precipitation Reactions
4.3 Acid-Base Reactions
4.5 Concentrations of Solutions
4.6 Solution Stoichiometry & Chemical Analysis

Chapter 5: Thermochemistry (INTRODUCTION)

5.1 The Nature of Energy
5.3 Enthalpy
5.4 Enthalpies of Reaction

Chapter 6: Electronic Structure of Atoms

6.1 The Wave Nature of Light
6.2 Quantized Energy and Photons
6.3 Line Spectra and the Bohr Model
6.4 The Wave Nature of Matter
6.5 Quantum Mechanics and Atomic Orbitals
6.6 Representations of Orbitals
6.7 Many-Electron Atoms
6.8 Electron Configurations
6.9 Electron Configurations and the Periodic Table

Chapter 7: Periodic Properties of the Elements

Students are responsible for reading & understanding sections 7.1, 7.6-7.8

7.2 Effective Nuclear Charge
7.3 Sizes of Atoms and Ions
7.4 Ionization Energy
7.5 Electron Affinities

Chapter 8: Basic Concepts of Chemical Bonding

8.1 Chemical Bonds, Lewis Symbols, and the Octet Rule
8.2 Ionic Bonding
8.3 Covalent Bonding
8.4 Bond Polarity and Electronegativity
8.5 Drawing Lewis Structures
8.6 Resonance Structures
8.7 Exceptions to the Octet Rule
8.8 Strengths of Covalent Bonds

Chapter 9: Molecular Geometry and Bonding Theories

9.1 Molecular Shapes
9.2 The VSEPR Model
9.3 Molecular Shape and Molecular Polarity
9.4 Covalent Bonding and Orbital Overlap
9.5 Hybrid Orbitals
9.6 Multiple Bonds

Chapter 10: Gases

10.1 Characteristics of Gases
10.2 Pressure
10.3 The Gas Laws
10.4 The Ideal-Gas Equation
10.5 Further Applications of the Ideal-Gas Equation
10.6 Gas Mixtures and Partial Pressures
10.7 Kinetic-Molecular Theory
10.8 Molecular Effusion and Diffusion

Chapter 11: Intermolecular Forces, Liquids, and Solids

11.1 A Molecular Comparison of Gases, Liquids and Solids
11.2 Intermolecular Forces
11.3 Some Properties of Liquids
11.4 Phase Changes
11.5 Vapor Pressure
11.6 Phase Diagrams
11.7 Structures of Solids
11.8 Bonding in Solids

Chapter 13: Properties of Solutions

13.3 Factors Affecting Solubility
13.4 Ways of Expressing Concentration
13.5 Colligative Properties

MasteringCHEMISTRY™

PEARSON Education

Dear CHEM 1201 Student in Dr. E. Cook's sections 1, 3, 10, 11, 12 and 13:

In this course you will be using *MasteringChemistry*™, an online tutorial and homework program that accompanies your textbook.

What You Need:

- ✓ **A valid email address**
- ✓ **A student access code** (Comes in the Student Access Kit that may have been packaged with your new textbook or is available separately in your school's bookstore. Otherwise, you can purchase access online at www.masteringchemistry.com.)
- ✓ **The ZIP code for your school: 70803**

✓ **A *MasteringChemisty* Course ID: MCCOOK21765**

Register

- Go to www.masteringchemistry.com and click **New Students** under Register.
- To register using the Student Access Code inside the *MasteringChemistry* Student Access Kit, select **Yes, I have an access code**. Click **Continue**.

  –OR–

  ***Purchase access online*:** Select **No, I need to purchase access online now**. Select your textbook and whether you want to include access to the eBook (if available), and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process may differ slightly from the steps printed here.
- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under "Do you have a Pearson Education account?" and supply the requested information. Upon completion, the **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to www.masteringchemistry.com later.

Log In

- Go to www.masteringchemistry.com.
- Enter your Login Name (**use your LSU email address**) and Password and click **Log In**.

Enroll in Your Instructor's Course and/or Access the Self-Study Area

Upon first login, you'll be prompted to do one or more of the following:

- Enter your instructor's *MasteringChemistry* Course ID, which is **MCCOOK21765**
- Select your text (Brown, LeMay, Bursten, Murphy; 11th edition)
- **Very Important**: Enter your LSU Student ID (the 89... number, w/o spaces or hyphens)

Click **Save** and **OK**.

Congratulations! You have completed registration and have enrolled in your instructor's *MasteringChemistry* course. To access your course from now on, simply go to www.masteringchemistry.com, enter your Login Name and Password, and click **Log In**. If your instructor has created assignments, you can access them by clicking on the **Assignments** button. Otherwise, click on **Study Area** to access self-study material.

Support

Access Customer Support at www.masteringchemistry.com/support, where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Additional contact information for Customer Support, including Live Chat

Fall 2009 Tentative* Schedule CHEM 1201 Sections: 1, 3, 10, 11, 12, 13

Monday		Tuesday	Wednesday	Thursday	Friday
Aug. 24 Introduction			Aug. 26 Ch. 1		Aug. 28 Ch. 1
Aug. 31 Ch. 1, 2	HW: Intro to MC**		Sept. 2 Ch. 2		Sept. 4 Ch. 2
Labor Day, Sept. 7		HW (Ch. 1-2)	Sept. 9 Ch. 3		Sept. 11 Ch. 3
Sept. 14 Ch. 3	HW (Ch. 3)	Sept. 15 Exam 1 Ch. 1-3	Sept. 16 Ch. 4		Sept. 18 Ch. 4
Sept. 21 Ch. 4			Sept. 23 Ch. 4		Sept. 25 Ch. 4
Sept. 28 Ch. 4, 5	HW (Ch. 4)		Sept. 30 Ch. 6	*Fall Holiday, Oct. 1 & 2*	
Oct. 5 Ch. 6			Oct. 7 Ch. 6		Oct. 9 Ch. 6
Oct. 12 Ch. 6	HW (Ch. 5-6)	Oct. 13 Exam 2 Ch. 4-6	Oct. 14 Ch. 7		Oct. 16 Ch. 7
Oct. 19 Ch. 7			Oct. 21 Ch. 7, 8		Oct. 23 Ch. 8
Oct. 26 Ch. 8	HW (Ch. 7)		Oct. 28 Ch. 8		Oct. 30 Ch. 8
Nov. 2 Ch. 8, 9	HW (Ch. 8)		Nov. 4 Ch. 9		Nov. 6 Ch. 9
Nov. 9 Ch. 9		Nov. 10 Exam 3 Ch. 7-8	Nov. 11 Ch. 9		Nov. 13 Ch. 9
Nov. 16 Ch. 10	HW (Ch. 9)		Nov. 18 Ch. 10		Nov. 20 Ch. 10
Nov. 23 Ch. 10	HW (Ch. 10)		Nov. 25 Ch. 11	*Thanksgiving Break, Nov. 26 & 27*	
Nov. 30 Ch. 11	HW (Ch. 11)	Dec. 1 Exam 4 Ch. 9-11	Dec. 2 Ch. 13		Dec. 4 Loose Ends
75-minute Evening Exams: TUESDAYS (09/15, 10/13, 11/10, 12/1); 6:15-7:30 pm **Group Final Exam: Monday, Dec. 7; 5:30 – 7:30 pm**					

* This schedule may undergo changes due to unforeseen circumstances (such as hurricanes, etc.); however, every effort will be made to keep the same exam dates and most HW deadlines. ** Homework deadlines are at 8 pm on each of the indicated days.